UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,577	07/01/2003	Maxim B. Belotserkovsky	PU030131	5200

24498	7590	12/27/2004	

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EXAMINER
KADING, JOSHUA A

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 12/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-20_ is/are rejected.

7)☒ Claim(s) _6, 18, and 20_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _01 July 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 16, 18, and 20 are objected to because of the following informalities:

Claims 16, 18, and 20 state, "wherein the recited acts." There is no antecedent

5   basis for "the recited acts" and it is believed applicant is referring back to the method

steps as "recited acts." Therefore, it is suggested that claims 16, 18, and 20 have the

phrase "wherein the recited acts" changed to --wherein the recited method steps--.

Appropriate correction is required.

10   ### Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
15 > the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 6-10, and 12-20 are rejected under 35 U.S.C. 103(a) as being

20   unpatentable over Hassan et al. (U.S. Patent 5,968,198) in view of Rosenberg et al.

(U.S. Patent 6,141,788).

Regarding claim 1, Hassan discloses, "a system for generating forward error

correction (FEC) packets, comprising: a first FEC encoder that receives data and

25   encodes first FEC data with the data to form FEC encoded data (figure 4, element 122

as read in col. 6, lines 29-32); a second FEC encoder that encodes the FEC encoded

data to produce second FEC data (figure 4, element 106 as read in col. 6, lines 29-
32)..."

However, Hassan lacks what Rosenberg discloses, "an FEC packet formatter
that formats the second FEC data into an FEC packet (col. 2, lines 27-33 where the

5   XOR operation, which must be physically implemented using logic gates, produces a
corresponding FEC packet)."

It would have been obvious to one with ordinary skill in the art at the time of
invention to include the FEC packet formatter for the purpose of creating an FEC packet
that is associated with a given data packet. The motivation for associating an FEC

10   packet with a data packet is so that when both packets are received the FEC packet
can be used for error correction on the data packet.

Regarding claim 8, Hassan discloses, "a system for decoding a forward error
correction (FEC) packet, comprising: a first FEC decoder that receives a data packet

15   and an FEC packet and decodes data contained in the data packet using first FEC data
contained in the FEC packet to produce partially decoded data (figure 4, element 118 as
read in col. 6, lines 49-53); and a second FEC decoder that receives the partially
decoded data and further decodes the data (figure 4, element 140 as read in col. 7,
lines 50-62)..."

20   However, Hassan lacks what Rosenberg discloses, the further decoded data is
decoded "...based on second FEC data contained in the data packet (figure 1, element

S17 as read in col. 4, lines 7-19 which uses information from the FEC data identified by the value in S17 to decode the data packet)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the decoding the data based on the FEC data for the purpose of

5   reconstructing data associated with the FEC packet. The motivation for associating an FEC packet with a data packet for reconstruction is to provide for error correction on the data packet.

Regarding claim 13, Hassan discloses, "a method of processing forward error

10   correction (FEC) packets, comprising: receiving a data packet that contains data and first FEC data (col. 7, lines 50-67 where the first FEC data comes from the first encoding in figure 1, element 122); receiving an FEC packet that contains second FEC data (col. 6, lines 47-53 where the second FEC data comes from the second encoding in figure 1, element 106)..."

15   However, Hassan lacks what Rosenberg discloses, "deciding whether to use the second FEC data to process the data (figure 1, element S13 and col. 2, lines 39-41 whereby choosing to ignore the data is equivalent to deciding whether to use the data or not)."

It would have been obvious to one with ordinary skill in the art at the time of

20   invention to decide whether or not to use the second FEC data for the purpose of allowing receivers not able to handle FEC data to simple ignore it. The motivation for

giving receivers the ability to ignore FEC data would be so that these receives can still

receive the transmitted data but not use the error correction of the FEC data.

Regarding claim 2, Hassan and Rosenberg disclose the system of claim 1.

5   However, Rosenberg lacks what Hassan further discloses, "wherein the FEC packet is

inserted into an otherwise empty time division multiple access (TDMA) time slot (col. 1,

line 58 where it is known in the art that only empty slots in TDMA technology can be

allotted to data and therefore it would have been obvious that FEC packet would be

inserted into an empty slot)." It would have been obvious to one with ordinary skill in the

10   art to include the TDMA technology for the same reasons and motivation as in claim 1.

Regarding claim 3, Hassan and Rosenberg disclose the system of claim 2.

However, Hassan lacks what Rosenberg further discloses, "wherein a header

associated with the data contains information associating the data with the second FEC

15   data contained in the otherwise empty TDMA time slot (col. 2, lines 27-41 where each

FEC packet is associated with a given data packet for decoding at the receiving end)." It

would have been obvious to one with ordinary skill in the art to include the association

of FEC packet with the data for the same reasons and motivation as in claim 2.

20   Regarding claim 6, Hassan and Rosenberg disclose the system of claim 1.

However, Rosenberg lacks what Hassan further discloses, "wherein the second FEC

encoder employs a systematic block code to produce the second FEC data (col. 6, lines

29-32)." It would have been obvious to one with ordinary skill in the art to include the
systematic block code for the same reasons and motivation as in claim 1.

Regarding claim 9, Hassan and Rosenberg disclose the system of claim 8.

5   However, Hassan lacks what Rosenberg further discloses, "a header decoder to decode
a header associated with the data packet and identify the FEC packet (figure 1, element
S17 with col. 4, lines 10-19 and col. 5, lines 42-48 where the FEC header is decoded
and the data used to identify the data packets transmitted)." It would have been obvious
to one with ordinary skill in the art to include the header decoder for the same reasons

10   and motivation as in claim 8.

Regarding claim 10, Hassan and Rosenberg disclose the system of claim 8.
However, Rosenberg lacks what Hassan further discloses, "wherein the FEC packet is
received from a predetermined time division multiple access (TDMA) time slot (col. 1,

15   line 58 where if the system used is TDMA then the data was received from a time slot)."
It would have been obvious to one with ordinary skill in the art to include the receiving
the data in the TDMA time slot for the same reasons and motivation as in claim 8.

Regarding claim 14, Hassan and Rosenberg disclose the method of claim 13.

20   However, Rosenberg lacks what Hassan further discloses, "processing the data using
second FEC data to produce partially decoded data (col. 6, lines 47-53)." It would have

been obvious to one with ordinary skill in the art to include the processing of data to

produce partially decoded data for the same reasons and motivation as in claim 13.

Regarding claim 15, Hassan and Rosenberg disclose the method of claim 14.

5   However, Rosenberg lacks what Hassan further discloses, "processing the partially

decoded data with first FEC data (col. 7, lines 50-67 where the processing of data at the

receiver will be the reverse of what it was at the transmitter, i.e. the second encoded

data is decoded first and the first encoded data is decoded second)." It would have

been obvious to one with ordinary skill in the art to include the processing of the partially

10   decoded data to produce the fully decoded data for the same reasons and motivation as

in claim 14.

Regarding claim 17, Hassan and Rosenberg disclose the method of claim 13.

However, Hassan lacks what Rosenberg further discloses, "processing the data using

15   only the first FEC data (where Rosenberg has a receiver that uses a single FEC block

decoder, thus the second FEC data must be ignored, as provided in figure 1, S17, so

that the first FEC data can be properly decoded)." It would have been obvious to one

with ordinary skill in the art to include processing of the first FEC data for the same

reasons and motivation as in claim 13.

20

Regarding claims 16, 18, and 20, Hassan and Rosenberg disclose the method of

claims 13, 15, and 17. However, Rosenberg lacks what Hassan further discloses,

"wherein the recited method steps are performed in the recited order (figure 4 shows an

apparatus used to implement the method of claim 15 and the recited method steps are

done in the recited order as indicated by the data path from transmitter to receiver)." It

would have been obvious to one with ordinary skill in the art to include the recited

5   method steps for the same reasons and motivation as in claims 13, 15, and 17.

        Regarding claims 7, 12, and 19, Hassan and Rosenberg disclose the systems of

claims 1 and 8 and the method of claim 13. However, Hassan lacks what Rosenberg

further discloses, "wherein the FEC packet is ignored by a receiver to conserve power

10   (col. 2, lines 39-41 where although it is not stated that a result is the conservation of

power, it is an effect of ignoring FEC packet data as noted by applicant in the claim,

therefore all systems that ignore FEC packet data will conserve power)." It would have

been obvious to one with ordinary skill in the art to include the ignoring of FEC packet

data for the same reasons and motivation as in claims 1, 8, and 13.

15

        Claims 4, 5, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Hassan et al. and Rosenberg et al. as applied to claims 1, 2, and 10 above, and

further in view of Haoui et al. (U.S. Patent 5,742,640).

20   Regarding claims 4 and 11, Hassan and Rosenberg disclose the system of claim

2 and the system of claim 10. However, Hassan and Rosenberg lack what Haoui

discloses, "wherein a location corresponding to the otherwise empty TDMA time slot is

predetermined by a TDMA..." "master (claim 4)," or "transmitter (claim 11)." Figure 1,

element 36 and col. 2, lines 11-13 provide for the "master" or "transmitter" that

determines the slots for a TDMA system by multiplexing each channel or packet into a

corresponding time slot the system creates the TDMA frame. It would have been

5   obvious to one with ordinary skill in the art at the time of invention to include the

"master" or "transmitter" that provide for a predetermined location for the data for the

purpose of creating a TDMA frame. The motivation for using a TDMA system is to

provide from more efficient use of system capacity by breaking the transmission frame

into separate channel or user slots.

10

Regarding claim 5, Hassan and Rosenberg disclose the system of claim 1.

However, Hassan and Rosenberg lack what Haoui discloses, "a payload packet

formatter that formats the FEC encoded data into a data packet (figure 1, element 36

and col. 2, lines 11-13 where the multiplexer is a formatter that takes the FEC encoded

15   data to form the TDMA data packet)." It would have been obvious to one with ordinary

skill in the art at the time of invention to include the packet formatter for the purpose of

creating a TDMA frame. The motivation for using a TDMA system is to provide from

more efficient use of system capacity by breaking the transmission frame into separate
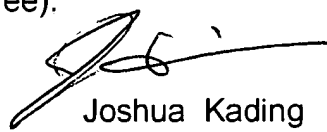
channel or user slots.

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Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joshua Kading whose telephone number is (571) 272-

3070. The examiner can normally be reached on M-F: 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

5   supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone

number for the organization where this application or proceeding is assigned is 703-
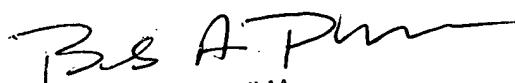
872-9306.

Information regarding the status of an application may be obtained from the

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10   published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

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Joshua Kading
Examiner
Art Unit 2661

December 13, 2004

BOB PHUNKULH
PRIMARY EXAMINER